MISSISSIPPI SPR-1(73), PART II

QUARTERLY PROGRESS REPORT

PERIOD: JANUARY/FEBRUARY/MARCH 2015

FEDERAL FY2015 2ND QUARTER

Contents

State Study No. 184--Long-Term Field Monitoring and Performance of Paving Fabric Interlayer Systems to Reduce Reflective Cracking

Principal Investigator: Farshad Amini

Funds Allocated:	$218,224.00	**Date Started:**	October 1, 2005
Expended to Date:	$145,141.76	**Completion Date:**	December 31, 2015
Current Work Program:	$150,020.10	**Time Remaining:**	9 months
Current Work Program Expenditures:	$4,057.84		

Research Agency: Jackson State University

Objective:

The formation of reflective cracking of pavement overlays has confronted highway engineers for many years. Stress-relieving interlayers, such as paving fabrics, have been used in an attempt to reduce or delay reflective cracking. The primary objective of this project is to conduct a long-term monitoring of the paving fabric interlayer systems to evaluate its effectiveness and performance. A comprehensive testing, monitoring, and analysis program is planned, where twelve 500-ft pavement sections of a two-lane highway are constructed, and then monitored for seven years. Particular attention is directed towards investigating the influence of overlay thickness on long-term performance. A comparison between the performance of paving fabric treatment systems for milled and non-milled surfaces, as well as a comparison between the performance of paving fabrics on sealed and non-sealed surfaces are reported. In addition, a cost-benefit analysis is performed to develop total life cycle costs for each section.

Progress:

During the last quarter, the analysis of the collected annual crack survey of the twelve paving fabric research sections was continued to determine the rate of crack growth over time. Preliminary relationships including the effect of paving fabric layer, overlay thickness, milling, and sealing on the crack growth have been developed.

Plans for Next Quarter:

During the next quarter, the analysis of crack survey data will be continued.

EEO and Title VI Information:
Employment Data for Research Staff

Total	Male					Female			
Staff	White	Black	Hispanic	Asian	Native Am	White	Black	Hispanic	Asian
1	1								

State Study No. 185--In-House Support To State Study No. 184 - Long-Term Field Monitoring And Performance Of Paving Fabric Interlayer Systems To Reduce Reflective Cracking

Principal Investigator: Cindy Smith, P.E.

Funds Allocated:	$ 30,000.00	**Date Started:**	October 1, 2005
Expended to Date:	$ 16,086.88	**Completion Date:**	December 31, 2015
Current Work Program:	$ 30,000.00	**Time Remaining:**	9 months
Current Work Program Expenditures:	$0.00		

Research Agency: Research Division, Mississippi Department of Transportation

Objective:

This study will be conducted to support the proposed study "Long-Term Field Monitoring and Performance of Paving Fabric Interlayer Systems to Reduce Reflective Cracking."

The required tasks include:

- FWD field testing and evaluation of requisite overlay of proposed pavement for inclusion in Phase II study.
- Operation of the MDOT profiler to obtain video images of the pavement surface one time prior to construction of the twelve test sections and nine times subsequent to construction.
- Mapping of cracks on the video logs for submission to Jackson State University.
- Traffic control will be required to facilitate FWD testing by MDOT and pavement coring operations by Burns, Cooley, & Dennis, Inc.
- Review of one construction report, three progress reports, and one final report.

Progress:

No work was performed this quarter.

Plans for Next Quarter:

Perform final distress survey of pavement control and test sections.

State Study No. 186--Consultant Support To State Study No. 184 – Long – Term Field Monitoring And Performance Of Paving Fabric Interlayer Systems To Reduce Reflective Cracking

Principal Investigator: Randy Ahlrich, P.E.
MDOT Project Monitor: Cindy Smith, P.E.

Funds Allocated:	$ 20,400.00	**Date Started:**	October 1, 2005
Expended to date:	$ 14,900.00	**Completion Date:**	December 31, 2015
Current Work Program:	$5,500	**Time Remaining:**	9 months

Current Work Program Expenditures: $ 0.00

Research Agencies: Burns, Cooley & Dennis, Inc.
Research Division, Mississippi Department of Transportation

Objective:

This project will provide consultant support to the proposed study "Long-Term Field Monitoring and Performance of Paving Fabric Interlayer Systems to Reduce Reflective Cracking." The required tasks include:

- Provide guidance on selection of paving fabric.
- Provide guidance regarding paving fabric construction for inclusion in construction bid documents.
- Monitor construction of test sections.
- Perform requisite coring of pavement test sections.
- Review the construction report, three progress reports and the final report.

Progress:
Consultant performed final coring of field test sections.

Plans for Next Quarter:
No work planned.

EEO and Title VI Information:
Employment Data for Burns Cooley & Dennis, Inc. Research Staff

Total				Male				Female	
Staff	White	Black	Hispanic	Asian	Native Am White	Black	Hispanic	Asian	NativeAm
1	1								

State Study No. 250— Full Depth Reclamation for High Traffic Applications

Principal Investigator: Isaac Howard
MDOT Project Monitor: James C. Watkins

Funds Allocated: $ 291,975.80 **Start Date:** January 17, 2012
Expended to Date: $ 93,669.32 **Completion Date:** December 31, 2015
Current Work Program: $ 150,000.00 **Time Remaining:** 9 months
Current Work Program Expenditures: $25,746.02

Research Agencies: Mississippi State University

Objective:

The proposed study will characterize properties of FDR that are important to design, construction and performance in high traffic applications. Historically FDR has been more commonly used in lower traffic applications and a study of the nature proposed could not be identified with materials similar to those native to Mississippi. The proposed study is aimed at providing design, construction, and performance guidance for FDR layers in high traffic applications, which have different behavioral conditions than low traffic applications.

Progress:

Progress was made on six tasks. Wheel tracking (Task 6) began the quarter 51.47% complete and ended the quarter 76.80% complete. Strength versus time (Task 7) began the quarter 68% complete and ended the quarter 74% complete. Strength variability (Task 8) began the quarter 70% complete and ended the quarter 100% complete. Task 13 (presenting results) began the quarter 0% complete and ended the quarter 100% complete. Quarterly progress report writing (Task 14) began the quarter 61% complete and ended the quarter 67% complete. Project management (Task 15) began the quarter 73% complete and ended the quarter 80% complete.

Plans for Next Quarter:

Plans for the next quarter are envisioned to focus on the majority of the remaining tasks. The project is envisioned to be nearing stages where all activities should be approaching more complete levels. Management activities (Tasks 14 and 15) are planned to continue in the next quarter.

EEO and Title VI Information:

Employment Data for Mississippi State University Research Staff

Total	Male					Female				
Staff	White	Black	Hispanic	Asian	Native Am	White	Black	Hispanic	Asian	NativeAm
16	15					1				

State Study No. 251— In-House Support to Full-Depth Reclamation for High-Traffic Applications

Principal Investigator: William Barstis

Funds Allocated: $ 6,000.00 **Start Date:** January 17, 2012
Expended to Date: $ 1,529.52 **Completion Date:** December 31, 2015
Current Work Program: $2,500.00 **Time Remaining:** 9 months
Current Work Program Expenditures: $0.00

Research Agencies: MDOT

Objective:

This study will provide in-house support to the Full-Depth Reclamation for High-Traffic Applications. This item will fund traffic control and MDOT staff time for the study.

Progress:

No work was performed this quarter.

Plans for Next Quarter:

Any follow-up activities at the request of MSU.

EEO and Title VI Information:

Employment Data for Mississippi State University Research Staff

Total	Male					Female				
Staff	White	Black	Hispanic	Asian	Native Am	White	Black	Hispanic	Asian	NativeAm
0										

State Study No. 262— Evaluation of the WatchDog Weather Station to Reduce Drift from MDOT Spray Trucks

Principal Investigator: John Byrd
MDOT Project Monitor: Cindy Smith, P.E.

Funds Allocated: $77,748.00 **Start Date:** September 23, 2013
Expended to Date: $ 23,146.07 **Completion Date:** December 31, 2015
Current Work Program: $38,000.00 **Time Remaining:** 9 months
Current Work Program Expenditures: $0.00

Research Agencies: Mississippi State University

Objective:

Weather conditions that cause right of way herbicide drift onto sensitive adjacent crops can be avoided if wind speed and direction relative to the spray truck can be accurately monitored during applications.

Progress:

Researcher did not provide quarterly report.

Plans for Next Quarter:

Researcher did not provide quarterly report.

EEO and Title VI Information:

Employment Data for Mississippi State University Research Staff

Total	Male					Female				
Staff	White	Black	Hispanic	Asian	Native Am	White	Black	Hispanic	Asian	NativeAm

State Study No. 266— Field Aging Effects on Asphalt Mixed at Different Temperatures and Hauled Different Distances

Principal Investigator: Isaac L. Howard
MDOT Project Monitor: Alex Middleton

Funds Allocated: $150,000.00 **Start Date:** March 1, 2014
Expended to Date: $ 7,056.26 **Completion Date:** December 31, 2017
Current Work Program: $50,000.00 **Time Remaining:** 33 months
Current Work Program Expenditures: $ 7,056.26

Research Agencies: Mississippi State University

Objective:

With all the options available to produce and place asphalt pavement in present day, a study into the field aging of these materials needs to be performed. Field aging has always been one of the biggest uncertainties in asphalt pavement performance, and with the widespread use of warm mix technologies, there are more aging questions than ever. This study is very timely, and if performed now can be conducted for less cost by leveraging the investment of a previous study.

Progress:

Progress was made on APAC task 1 and task 2. APAC task 1 began the quarter 0% complete and ended the quarter 25.03% complete due to parking lot use. Task 2 began the quarter 0% complete and ended the quarter 18.93% complete.

Plans for Next Quarter:

Plans for the next quarter are to work on tasks 1 to 3 (literature review, laboratory testing, and/or field testing)

EEO and Title VI Information:

Employment Data for Mississippi State University Research Staff

Total	Male					Female				
Staff	White	Black	Hispanic	Asian	Native Am	White	Black	Hispanic	Asian	NativeAm
4	4									